

Online Games e-infrastructure

An Open, Expandable Platform to Support Your Game Success

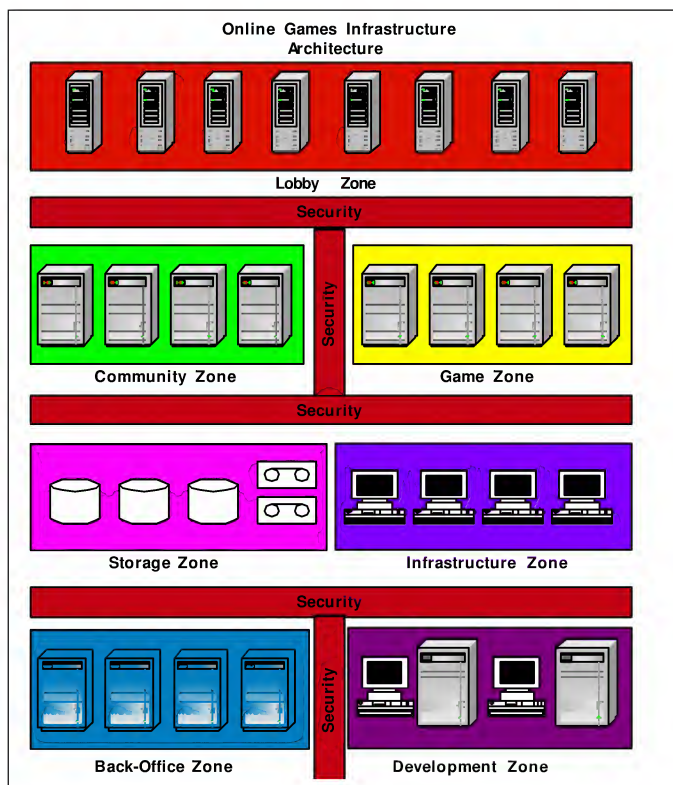


Whatever the game, whatever the growth, IBM helps you react quickly

Flexibility is vital in a changing environment. And few environments change as rapidly as those of the online games provider. No matter what genre of game the online games provider is bringing to the market, it is essential that they have a flexible, scalable and extensible approach. They must be ready to handle rapid growth and unexpected surges in overall usage, and be able to change their IT - and business - infrastructure to respond. In fact, it is critical for their financial success that online games providers have an infrastructure that not only meets the demands of new games, versions or content but is also able to efficiently handle widely varying numbers of subscribers, revenue-generating ancillary services, and challenging workloads.

IBM understands the varying requirements of online games providers and recognizes that a generic all-in-one platform is not practical. Therefore, IBM system architects have designed a specific architecture for online games providers. It is built around seven zones and offers the flexibility to respond to a constantly evolving environment.

From the game zone, where IBM provides a deep knowledge of optimizing operational costs, providing outstanding hardware and tools to manage the server farm, to the community and back-office zones, where IBM brings decades of skills in building similar e-infrastructures. In each of these zones, IBM has products and services to help the online game provider meet their infrastructure needs.



The Seven Game Zones

Lobby Zone: the first entry point into the game provider's site

Community Zone: all gamer-accessible services and information outside the game itself

Game Zone: servers and infrastructure to support the game

Storage Zone: storage management of all user data in a multi-platform environment

Infrastructure Zone: systems management for the complete infrastructure

Back-Office Zone: all business-related systems

Development Zone: all the systems and tools to develop and test the game

The Lobby Zone

The **Lobby Zone** is the entry point for the potential game-playing customer (the "gamer") into the online game provider's web site. Here, the new gamer is allowed to register or an existing gamer will have authorization and subscription status checked. Gamers may "hang out" in the lobby and chat with others prior to entering the game or, they may use a "matchmaking" service to locate other players at a similar level with whom to play.

Depending on the game device being used - PC, game console such as Gameboy or Playstation 2, Personal Digital Assistant (PDA), cell phone, or

hybrid device such as the N-gage - the protocol used and the form factor of the response may need to change. In all cases, the needed functions remain the same.

The Lobby Zone also contains servers that provide load balancing, proxy or caching services, significantly reducing Internet bandwidth and increasing the site responsiveness. Here, appliance-style servers such as IBM's BladeServer are often used, due to their cost-effective and easy scalability. IBM Global Services, with its deeply skilled Networking Services consultants, can design and implement appropriate configurations for this zone to balance performance and accessibility with security, availability and lowest cost of operations.

The Game Zone

For More Information visit us at: <http://www-1.ibm.com/solutions/digitalmedia/#home>

Here is where the main event happens - the game itself. This is what draws the gamers here! Stable and highly available systems are needed to support the game that everyone has worked so hard to make challenging and seductive. Responsiveness, combined with the ability to quickly move resources as needed, serve to keep the gamers there. Fast, reliable servers and optimized operations make the difference. This zone should be securely protected from interference from other, ancillary services - while providing in-game access to them as needed.

The Community Zone

The non-game content, commerce, self-service and ancillary services provided by the online games provider is based in the **Community Zone**. Community has been shown to be key to keeping existing gamers interested, and to increasing the revenue per gamer. By providing a variety of services, such as access to information, chat, game-related commerce, spontaneous team-building or guild self-management tools such as personalized portals and guild calendars, online game providers allow each gamer to feel part of the game even while not playing. Self-service customer care, backed by human self-service when self-help has failed, is also part of the community-enhancing services to be provided here.

This wide range of services, with needs that continually become more sophisticated over time, must support multiple points of integration and multiple points of interaction. Support for open standards and extensible programming models is key to flexible additions or upgrades of these community-building capabilities.

The Storage Zone

For companies with large data or database requirements, a separate Storage Zone is an emerging best practice. This centralization of storage into a separate zone provides for easier expansion, monitoring, backup and recovery of data resources. For those game providers for whom large amounts of persistent data is a requirement, this approach may simplify operations and ensure higher availability. For others, this may be a concept with future applicability, but may currently be overkill.

The Infrastructure Zone

The e-infrastructure is managed from the **Infrastructure Zone**. Tasks such as monitoring, optimizing performance across the server farm, upgrading servers with required security patches, and so on, are all managed from this zone. With Tivoli, it is possible to deploy integrated, end-to-end service delivery management across all of the zones and the separating security appliances. This allows the effective management and delivery of high quality, cost-effective game services to the game-playing customers. Recent additions to the Tivoli suite provide the ability to effectively and non-disruptively, in an orchestrated fashion, move resources from one part of the infrastructure to another.

The Back-Office Zone

Depending on the evolution of the games provider's business, there may be a separate Back-Office Zone. This is where the traditional business applications required to support any business - accounting, payroll, etc. - operate. This zone should be securely separated from gamer-accessible money-generating and community-building zones.

The Development Zone

The Development Zone is where development and testing are done. In addition to developer workstations, code and graphics repositories and testing workstations, there may be a test-bed similar in structure to the game zone, used to test new versions or new content prior to moving it into the live site. Ensuring that the next revision of game content is consistent in stability and quality with currently running code can dramatically reduce the churn of dissatisfied players and reduce the impact on customer service. Here, infrastructure changes can also be tested. Therefore, this zone is traditionally one of the most dynamic and unstable parts of the overall infrastructure - and thus should be well isolated and protected from the customer-facing zones.



An expandable platform for your game successes

The above e-infrastructure architecture enables online games providers to launch their online presence with a comparatively small investment in hardware and software. It also offers the ability to scale up quickly by adding more functions, more services, and more servers as the game's success grows. This flexibility is important, as so much is unknown at the time each game launches. With a well thought-out model in mind up front, and the ability to scale rapidly and integrate off-the-shelf functions easily, online game providers can start with the minimum and avoid buying more than they initially need. This e-infrastructure is designed to handle sudden, unpredictable changes in workloads and business models.

© Copyright IBM Corporation 2002

IBM Corporation
1133 Westchester Avenue
White Plains, NY 10604

Printed in the United States of America
01-02
All Rights Reserved

IBM and the IBM logo are trademarks or registered trademarks of IBM Corporation in the United States, other countries, or both.

Other company, product and service names may be trademarks or service marks of others.

References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.

For More Information visit us at: <http://www-1.ibm.com/solutions/digitalmedia/#home>